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CALFED Role and Policy
With Respect to San Joaquin River Water Quality Problems
March 30, 1997

The CALFED Geographic Problem Area is the legally defined Delta. Resolution of problems within this area is the CALFED mission. It is understood that some species that inhabit the Delta are impacted by conditions outside the Delta. Also, areas outside the Delta are sources of water quality parameters of concern to the Delta, its inhabitant species, and users of Delta water. In resolving the problems of the Delta, CALFED may undertake actions throughout its Geographic Solution Area, as necessary. The Solution Area includes the San Joaquin River watershed. Water quality parameters of concern as defined by the Water Quality Technical Group in the San Joaquin River and Delta Estuary are shown in Table 1, attached.

Sources of water quality problems in the San Joaquin River and its tributaries include:

- agricultural tail water, or return flows, which may contribute salts, nutrients, pesticide residues, pathogens, and turbidity;
- subsurface agricultural drainage that may contribute salts, nutrients, pesticides (some fungicides), selenium, and other trace elements. The Grasslands area is the primary source of selenium entering the San Joaquin River and Delta;
- storm inflows that may contribute selenium, turbidity, pathogens, organic carbon, nutrients, pesticides, and other chemical residues.
- municipal and industrial discharges that may contribute salts, trace elements, nutrients, metals, pathogens, chemical residues, oil and grease, and turbidity;
- acid drainage from inactive and abandoned mines which introduce metals such as zinc, cadmium, copper, and mercury; and,

Of these sources, irrigation tail water from wetlands and subsurface agricultural drainage discharged to the San Joaquin River from the Grasslands area are perhaps the most significant. During times of low flow in the San Joaquin River, agricultural drainage discharge may constitute the majority of San Joaquin River flow. At present, control measures largely consist of irrigation and drainage management (source reduction) and dilution of salt and other constituents upstream reservoir releases. Interim solutions for protection of water quality and wildlife, and sustainability of agriculture may include drainage reduction and reuse, timed drainage release, drainage treatment to reduce trace elements and other contaminants, and salt separation and utilization.

A plan for managing agricultural-related water quality problems in the westside San Joaquin Valley portion of the San Joaquin River Watershed and the Tulare Basin was advanced in 1990 by a joint federal and State interagency program in a report entitled, "A management plan for Agricultural Subsurface Drainage and Related Problems on the Westside San Joaquin Valley." In 1991, four federal and four State agencies signed a Memorandum of Understanding, forming the San Joaquin Valley Drainage Implementation Program in which all parties agreed to use the 1990 Management Plan recommendations "as the principal guide for remedying subsurface agricultural drainage problems" and to "work together...to implement all components" of the 1990 Plan. The MOU also called on the University of California to establish committees to conduct a "technical and economic evaluation of the management options proposed" in the 1990 Plan along with utilization of salt as a by-product of drainage management. The work of the UC committees is to be followed by a joint Ad Hoc Coordination Committee to "identify interactions and tradeoffs between management options, and develop a set of recommendations to the SJVDIP".

In 1995, the State Water Resources Control Board, a SJVDIP member agency, adopted the *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary.* The Plan states, "ultimately, it will be necessary for the in-basin management of salts to be supplemented by the disposal of salts outside of the San Joaquin Valley" and that "it is necessary to begin planning for a long-term solution to the San Joaquin Valley drainage problem". The SJVDIP 1990 Plan also recognized that ultimately there will be a need for salt removal from the Valley. The SWRCB has also recommended that consideration should be given to taking advantage of winter flood flows to dilute and remove salts from low-lying areas of the San Joaquin Valley as part of a general program to adjust the timing of salt load discharges from low flow to high flow periods.

Primarily due to lack of funding, limited success has been achieved in implementing the drainage plans and policies established by the 1990 Management Plan, the 1991 MOU and the 1995 Water Quality Control Plan. This suggests an appropriate role for CALFED.

CALFED establishes the following policies with respect to agricultural drainage in the San Joaquin Valley watershed:

- CALFED will assume a leadership role in facilitating implementation of San Joaquin Valley drainage management and control plans. This will be accomplished by coordinating with regulatory and drainage entities; by helping to arrange funding; and by helping to increase awareness of drainage problems and the need for corrective actions. CALFED will also work to gain broad stakeholder support for correcting Valley drainage problems affecting the Delta and species dependent on the Delta as part of the overall CALFED program.

- CALFED will assume a leadership role in facilitating implementation of measures to correct non-drainage water quality problems within the San Joaquin River watershed that affect the Delta and species dependent on the Delta as part of the overall CALFED program. Actions to correct these problems are being developed under the CALFED

Water Quality Program.

- CALFED will adopt an overall watershed approach for encouraging comprehensive solutions to the water quality problems of the Valley that affect the Delta and species dependent on the Delta.

- CALFED recognizes the SJVDIP as the primary entity to provide overall technical direction for managing implementation of interim solutions to drainage problems in the San Joaquin Valley. Because development of long term solutions is not within the scope of the SJVDIP, CALFED will assume responsibility for encouraging development of durable, long term solutions to Valley drainage problems affecting the Delta and species dependent on the Delta.

- CALFED water quality actions in the San Joaquin River watershed must meet the CALFED Solution Principles of affordabilty, durability, implementability, equity, conflict reduction and non-redirection of significant impacts, and must be cost-effective.

- 1990 Plan recommendations that are currently being implemented will be supported by CALFED, and implementation of other 1990 Plan recommendations that have local and SJVDIP support, will be incorporated into the CALFED program.

- CALFED recognizes the 1991 MOU as the continuing basis for interagency cooperation and joint actions to solve drainage problems.

- CALFED endorses and supports the *memorandum of Understanding Regarding Efficient Water Management Practices by Agricultural Water Suppliers in California* as a means of implementing the source control recommendations of the 1990 Plan.

- CALFED endorses the 1997 Activity Plan process of the SJVDIP and will facilitate its implementation.

- CALFED endorses and supports continuing monitoring, applied research, and demonstration projects that will advance knowledge of solutions to the drainage and water quality problems of the San Joaquin Valley that affect the Delta and species dependent on the Delta.

In determining priorities for action, the following points will be among the considerations:

- the degree to which the proposed activity will improve the quality of Sacramento-San Joaquin Delta Estuary waters, in comparison to the cost of implementing the solution. Correcting the water quality problems of drainage into Tulare Lake Basin is not included in the CALFED program because this drainage does not affect the Delta or species dependent on the Delta. It is recognized, however, that drainage problems of the Tulare Lake Basin are a part of the overall drainage problems of the San Joaquin Valley. An ideal solution would correct Tulare Lake Basin drainage problems as well as those

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affecting the Delta, and this consideration may enter into CALFED decision making.

- whether proposed activities related to water quality are consistent with CALFED objectives related to ecological restoration, water supply, and system reliability issues;
- the extent to which the problem and proposed solutions have been investigated and technically documented;
- the degree to which the proposed solution employs proven technology;
- whether there are prospective local/state/federal participants or partnerships to support problem resolution, and whether a suitable management infrastructure exists;
- whether CALFED participation would reduce responsibilities of any party for compliance with cleanup orders, site remediation, environmental mitigation, or other requirements arising from law or regulation. If so, CALFED would not participate.

To fulfill its role to facilitate implementation of detailed policies, plans and actions, CALFED staff will assume a leadership role to involve San Joaquin Valley stakeholders in development of solutions, and will undertake an active program of outreach to assure the interests of all stakeholders are represented.

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TABLE 1

CALFED Bay-Delta Water Quality Parameters of Concern

Cadmium	Dissolved Oxygen
Copper	Salinity (TDS, EC)
Mercury	Temperature
Selenium	Turbidity
Zinc	Unknown Toxicity
Carbofuran	Bromide
Chlordane	Nutrients (Nitrate)
Chlorpyrifos	Pathogens
DDT	TOC
Diazinon	Viruses
PCBs	Boron
Toxaphene	Chloride
Ammonia	pH (Alkalinity)
Temperature	SAR